

Amendment and Response
US4825-2 (SRI-005)
U.S.S.N. 10/800.491
Page 2

Amendment to the Claims:

Please amend the claims to read as follows:

- 1 1. (currently amended) A heads-up display system for an aircraft having a
2 rotating propeller assembly with at least one propeller blade within view
3 of at least one occupant of the aircraft, the heads-up display system
4 comprising:
5 a plurality of light-emitting elements disposed on a side of ~~a the~~
6 propeller blade substantially facing at least one occupant of the aircraft;
7 and
8 a graphics generator disposed in the rotating propeller assembly,
9 the graphics generator controlling illumination of one or more of the
10 light-emitting elements on the side of the propeller blade in accordance
11 with the rotation of the propeller assembly to produce at least one
12 graphical image that appears to at least one occupant of the aircraft ~~to be~~
13 ~~superimposed on a background.~~
- 1 2. (original) The heads-up display system of claim 1, wherein the at least
2 one graphical image conforms to an object in the background upon
3 which that graphical image is superimposed.
- 1 3. (original) The heads-up display system of claim 1, wherein one of the
2 light-emitting elements, when illuminated, produces a narrow beam of
3 light that is visible to each occupant within a radiation pattern of the
4 light and is unseen by each occupant outside of the radiation pattern.
- 1 4. (currently amended) The heads-up display system of claim 1, wherein
2 one of the light-emitting elements, when illuminated, produces a wide

Amendment and Response
US4825-2 (SRI-005)
U.S.S.N. 10/800.491
Page 3

beam of light visible simultaneously to multiple occupants of the aircraft
with a view of the propeller blade.

5. (original) The heads-up display system of claim 1, further comprising a
data processor obtaining information from aircraft sensors and
generating a command based on the information for use in generating
the graphical image.

6. (currently amended) The heads-up display of claim 1, further comprising
a communication channel between a processor in an airframe of the
aircraft and the graphics generator of the propeller assembly for
transferring signals between the processor and the graphics generator.

7. (original) The heads-up display of claim 6, wherein the communication
channel is a wireless channel.

8. (original) The heads-up display of claim 6, wherein the communication
channel is a wired channel.

9. (original) The heads-up display of claim 8, wherein the communication
channel includes a slip ring.

10. (original) The heads-up display of claim 1, further comprising a processor
translating electrical signals obtained from a sensor of the aircraft into a
command to be sent to the graphics generator for producing the
graphical image.

11. (currently amended) The heads-up display of claim 1, further comprising
an electrical power source supplying power to the graphics generator.

12. (currently amended) The heads-up display of claim 11, wherein the
electrical power source for supplying power to the graphics generator in

Amendment and Response
US4825-2 (SRI-005)
U.S.S.N. 10/800.491
Page 4

3 the rotating propeller assembly is disposed within the rotating propeller
4 assembly and ~~is derived~~ derives the supplied power from the rotation of
5 the propeller assembly.

1 13. (currently amended) The heads-up display of claim 1, wherein the
2 propeller blade is a first propeller blade, and further comprising a second
3 plurality of light-emitting elements disposed on a side of a second
4 propeller blade of the propeller substantially facing at least one occupant
5 of the aircraft and emitting light in accordance with the rotation of the
6 propeller assembly to produce at least one graphical image that appears
7 to at least one occupant to be superimposed on the background.

1 14. (original) The heads-up display of claim 13, wherein the at least one
2 graphical image produced by the second plurality of light-emitting
3 elements is redundant to the at least one graphical image produced by
4 the plurality of light-emitting elements on the first propeller blade.

1 15. (currently amended) An aircraft, comprising:

2 a propeller assembly having a plurality of propeller blades, the
3 propeller assembly rotating during the aircraft's operation;

4 an array of light-emitting elements disposed on a side of one or
5 more of the propeller blades; and

6 a graphics generator in the rotating propeller assembly, the
7 graphics generator controlling illumination of one or more of the light-
8 emitting elements in the array of light-emitting elements disposed on the
9 side of one of the propeller blades in accordance with a rotation of the
10 propeller assembly, to produce a display of a graphical image.

1 16. (original) The aircraft of claim 15, further comprising a processor
2 obtaining information from aircraft instrumentation and sending a

Amendment and Response
US4825-2 (SRI-005)
U.S.S.N. 10/800.491
Page 5

3 command based on the information to the graphics generator over a
4 communication channel to control the display of the graphical image.

1 17. (currently amended) The aircraft of claim 16, wherein the communication
2 channel is ~~one of~~ a wireless channel ~~and~~ or a wired channel.

1 18. (currently amended) The aircraft of claim 15, further comprising an
2 electrical power generator being disposed within the rotating propeller
3 assembly and generating from the rotation of the propeller assembly a
4 ~~source of power~~ that is supplied to the graphics generator.

1 19. (original) A propeller, comprising:
2 a propeller blade;
3 a plurality of light-emitting elements disposed on a side of the
4 propeller blade; and
5 a spinner having a graphics generator in communication with the
6 plurality of light-emitting elements to control illumination of one or more
7 of the light-emitting elements in accordance with a rotation of the
8 propeller.

1 20. (original) The propeller of claim 19, further comprising a propeller-
2 position sensor determining a current angular position of the propeller
3 and communicating the current angular position to the graphics
4 generator.

1 21. (currently amended) An apparatus for use in a craft having a rotating
2 propeller, the apparatus comprising:
3 a light source disposed on a side of a blade of the propeller;
4 means for determining a current rotational position of the
5 propeller; and

Amendment and Response
US4825-2 (SRI-005)
U.S.S.N. 10/800,491
Page 6

6 means, disposed on the rotating propeller, for controlling
7 illumination of the light source based on the current rotational position
8 of the propeller.

1 22. (original) The apparatus of claim 21, further comprising means for
2 generating power from the rotation of the propeller and providing the
3 generated power to the means for controlling illumination of the light
4 source.

1 23. (currently amended) A method of producing a heads-up display for an
2 aircraft having an airframe and a rotating propeller assembly with a
3 rotating propeller, the method comprising:
4 providing a plurality of light-emitting elements on a side of a
5 propeller blade;
6 determining a current rotational position of the propeller assembly;
7 and
8 transmitting a command from the airframe to the rotating propeller
9 assembly;
10 controlling, at the rotating propeller assembly, illumination of the
11 plurality of the light-emitting elements based on the command and the
12 current rotational position of the propeller assembly.

1 24. (currently amended) The method of claim 23, further comprising
2 obtaining information from instrumentation of the aircraft, and
3 generating the transmitted command wherein the step of controlling
4 illumination causes display of a graphical image based on the obtained
5 information during the rotation of the propeller.

1 25. (new) The heads-up display of claim 1, wherein the graphics generator
2 includes a plurality of graphics generator subunits, each graphics

Amendment and Response
US4825-2 (SRI-005)
U.S.S.N. 10/800,491
Page 7

3 generator subunit corresponding to a different propeller blade of the
4 propeller assembly and controlling illumination of one or more light-
5 emitting elements on that propeller blade.

1 26. (new) The aircraft of claim 15, wherein the graphics generator includes a
2 plurality of graphics generator subunits, each graphics generator
3 subunit corresponding to a different one of the propeller blades of the
4 propeller assembly and controlling illumination of one or more light-
5 emitting elements disposed on a side of that propeller blade.

1 27. (new) The propeller of claim 19, further comprising at least a second
2 propeller blade with a plurality of light-emitting elements disposed on a
3 side of the second propeller blade, and wherein the graphics generator
4 includes a plurality of graphics generator subunits, each graphics
5 generator subunit corresponding to a different propeller blade of the
6 propeller and controlling illumination of one or more light-emitting
7 elements disposed on a side of that propeller blade.